WHAT IS CLAIMED IS:

1. A reactivation circuit coupled with a system having a protection mechanism which prevents runaway current, the reactivation circuit comprising:

a charging circuit coupled with a storage element, the charging circuit configured to supply a charging current to the storage element once the protection mechanism is activated to prevent the supplying of the output current; and

a monitoring circuit coupled with at least the system and the storage element, and the monitoring circuit configured to monitor the voltage across the storage element and to signal the system when voltage across the storage element exceeds a predefined threshold.

2. The reactivation circuit as claimed in claim 1, wherein:

the storage element coupled in parallel with a load such that the voltage across the storage element is substantially equal to a voltage across the load.

3. The reactivation circuit as claimed in claim 2, wherein:

the storage element includes a capacitance.

4. The reactivation circuit as claimed in claim 1, wherein:

the monitoring circuit further couples with the charging circuit and is further configured to deactivate the charging circuit when the voltage across the storage element exceeds the predefined threshold.

5. The reactivation circuit as claimed in claim 4, further comprising:

a latch coupled between the monitoring circuit and both the charging circuit and the system, configured to receive a signal from the monitoring circuit; and

the latch further configured to maintain the charging circuit in at least a deactivated state as signaled by the monitoring circuit.

6. A shutdown and reactivation apparatus having an active state and a deactivated state, the shutdown and reactivation apparatus is configured to protect a system from runaway output current, the shutdown and reactivation apparatus comprising:

a shutdown signal configured to deactivate the system such that a load no longer receives an output current;

a charging circuit coupled with the load, and configured to supply a charging current to the load when the shutdown and reactivation apparatus is in the active state; and

a first monitoring circuit coupled with the load, and configured to monitor an output voltage across the load when the shutdown and reactivation apparatus is in the active state, and to signal the shutdown and reactivation apparatus to transition to the deactivated state and to reactivate the system when the output voltage is at least equal to a predefined voltage threshold.

7. The shutdown and reactivation apparatus as claimed in claim 6, further comprising:

a driving circuit coupled with the load, and configured to prevent the output current from being supplied to the load when the shutdown and reactivation apparatus is in the active state.

8. The shutdown and reactivation apparatus as claimed in claim 7, further comprising:

the driving circuit further configured to supply the load with the output current when the shutdown and reactivation apparatus is in the deactivated state.

9. The shutdown and reactivation apparatus as claimed in claim 7, further comprising:

the shutdown signal coupled with the driving circuit, and configured to set the driving circuit such that the driving circuit prevents the output current from being supplied to the load.

10. The shutdown and reactivation apparatus as claimed in claim 9, further comprising:

the shutdown signal further coupled with the charging circuit and configured to signal the charging circuit to supply the charging current to the load.

11. The shutdown and reactivation apparatus as claimed in claim 6, further comprising:

a shutdown signal configured to set the shutdown and reactivation apparatus in the active state.

12. A system configured to supply an output current to a load and having shutdown protection, the system comprising:

a shutdown signal configured to signal the system to stop supplying the load with the output current; and

a first monitoring circuit coupled with the load , and the monitoring circuit configured to monitor an output voltage across the load and to signal the system to again supply the output current to the load when the output voltage exceeds a predefined voltage threshold.

13. The system as claimed in claim 12, further comprising:

a charging circuit coupled with the shutdown signal and the load, the charging circuit configured to supply the load with a charging current when signaled by the shutdown signal.

14. The system as claimed in claim 13, further comprising:

a latch coupled between the first monitoring circuit and the charging circuit; and

the latch configured to maintain the charging circuit in a deactivated and active state as signaled by the first monitoring circuit.

15. The system as claimed in claim 13, further comprising:

a latch further coupled between the shutdown signal and the charging circuit; and

the latch configured to maintain the charging circuit in an active or deactivated state as signaled by the shutdown signal.

16. The system as claimed in claim 15, wherein:

the latch is further configured to maintain the charging circuit in the active state to supply one of a plurality of charging currents such that each one of the plurality of charging current has a different predefined current level.

17. The system as claimed in claim 13, wherein:

the load includes at least a capacitive load configured to receive the charging current .

18. The system as claimed in claim 17, wherein:

the capacitive load is configured to receive the charging current when a short circuit across the load has been removed.

19. The system as claimed in claim 13, further comprising:

a second monitoring circuit coupled with the shutdown signal and the charging circuit, the second monitoring circuit configured to monitor the shutdown signal and to signal the charging circuit when the shutdown signal transitions from a first state to a second state.

20. The system as claimed in claim 19, wherein:

the first monitoring circuit includes at least a first edge detector configured to detect a transition of the output voltage when the output voltage is at least equal to the predefined threshold voltage.

21. The system as claimed in claim 20, wherein:

the second monitoring circuit includes at least a second edge detector configured to detect a transition of the shutdown signal signaling the system temperature is at least equal to the predefined temperature threshold.

22. The system as claimed in claim 12, further comprising:

a driving circuit coupled with the load, and configured to supply the load with the output current.

23. The system as claimed in claim 22, wherein:

the driving circuit includes at least one switch having at least a first and second state, such that the driving circuit delivers the output current to the load when the switch is in the first state and the driving circuit is prevented from delivering the output current to the load when the switch is in the second state.

24. The system as claimed in claim 22, wherein:

the driving circuit includes at least a first transistor coupled with a second transistor;

the first transistor further coupled with the first monitoring circuit such that the first monitoring circuit signals the first transistor to toggle from a first state to a second state; and

the first transistor configured to toggle the second transistor to a third state when first transistor is toggled to the second state and to toggle the second transistor to a fourth state when the first transistor is toggled to the first state such that the driving circuit conducts the output current to the load when second transistor is in the third state and the driving circuit does not conduct the output current to the load when the second transistor is in the fourth state.

25. The system as claimed in claim 22, wherein:

not activating the driving circuit until a system temperature is at least equal to a lower predefined temperature.

26. A reactivation apparatus coupled with a system having a protection mechanism for preventing damage to a system, the reactivation apparatus comprising:

a charging circuit having a first and second state;

the charging circuit coupled with a load;

a shutdown signal coupled with the charging circuit, and configured to signal the charging circuit to enter a first state such that charging circuit supplies a charging current to the load; and

a monitoring circuit coupled with the load and the charging circuit, and the monitoring circuit configured to monitor an output voltage and to signal the charging circuit to transition to a second state such that the charging circuit stops suppling the load with the charging current when the output voltage is at least equal to a predefined voltage threshold.

27. The reactivation apparatus as claimed in claim 26, further comprising:

a driving circuit having at least a first and second state,

the driving circuit coupled with the load, and configured to supply the load with an output current when the driving circuit is in the first state; and

the shutdown signal coupled with the driving circuit, and the shutdown signal configured to signal the driving circuit to transition to the second state such that the driving circuit stops supplying the output current to the load when the driving circuit is in the second state.

28. The reactivation apparatus as claimed in claim 27, wherein:

the monitoring circuit coupled with the driving circuit, and the monitoring circuit further configured to signal the driving circuit to transition back to the first state such that the driving circuit again supplies the load with the output current when the output voltage is at least equal to the predefined voltage threshold.

29. A method of reactivating a system following deactivation due to runaway current , comprising the steps of:

receiving a shutdown signal;

supplying a charging current to a storage element;

monitoring a voltage across the storage element

reactivating the system when the voltage across the storage element is at least equal to a predefined voltage threshold.

30. The method as claimed in claim 29, wherein:

the step of supplying the storage element with the charging current wherein the storage element includes a capacitance and the charge current is supplied to the capacitance.

31. The method as claimed in claim 29, further comprising the steps of:

halting the supply of the charging current when the output voltage is at least equal to the predefined voltage threshold.

32. The method as claimed in claim 29, further comprising the steps of:

supplying a load with an output current prior to the step of receiving a shutdown signal; and

halting the supply of the output current to the load following the step of receiving a shutdown signal.

33. The method as claimed in claim 29, wherein:

deactivating a driving circuit configured to supply an output current to a load following the step of receiving the shutdown signal.

34. The method as claimed in claim 33, wherein:

the step of supplying the storage element with a charging current including activating a charging circuit configured to supply the charging current to the storage element.

35. The method as claimed in claim 34, further comprising the step of:

maintaining the driving circuit in a deactivated state and maintaining the charging circuit in an active state until the voltage across the storage element is at least equal to the predefined threshold voltage.

36. The method as claimed in claim 35, wherein:

the step of maintaining the driving circuit and the charging circuit including latching the driving circuit in the deactivated state and the charging circuit in an active state.

37. A shutdown and reactivation apparatus, comprising:

a driving circuit having a first and second state;

the driving circuit coupled with a load, and configured to supply the load with an output current when the driving circuit is in the first state;

a shutdown signal coupled with the driving circuit and configured to signal the driving circuit to transition to the second state such that driving circuit no longer supplies the output current to the load; and

a monitoring circuit coupled with the load and the driving circuit, and the monitoring circuit configured to monitor an output voltage and to signal the driving circuit to transition back to the first state to again supply the load with the output current when the output voltage is at least equal to a predefined voltage threshold.

38. The shutdown and reactivation apparatus as claimed in claim 37, further comprising:

a charging circuit having at least a first and second state, and the charging circuit coupled with the load; and

the shutdown signal coupled with the charging circuit, and the shutdown signal configured to signal the charging circuit to enter the first state and supply a charging current to the load.

39. The shutdown and reactivation apparatus as claimed in claim 38, wherein:

the monitoring circuit coupled with the charging circuit, and the monitoring circuit further configured to signal the charging circuit to transition to the second state such that the charging circuit no longer supplies the load with the charging current when the output voltage is at least equal to the predefined voltage threshold.

40. The shutdown and reactivation apparatus as claimed in claim 39, wherein:

the monitoring circuit configured to signal the charging circuit and the driving circuit when the output voltage exceeds the predefined voltage threshold.